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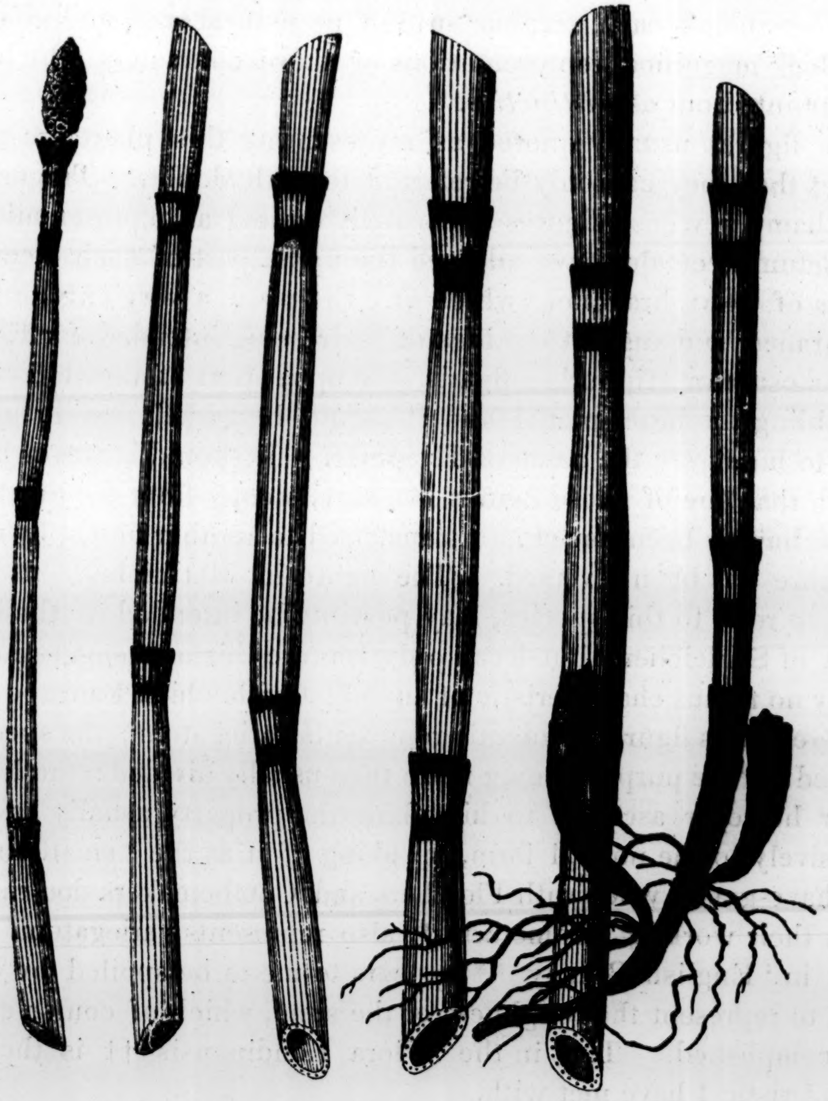
## ART. LXXVI. — *A History of the British Equiseta.*

By EDWARD NEWMAN.



ROUGH SHAVE-GRASS, OR DUTCH RUSH.
EQUISETUM HYEMALE of Linneus.

*β. Equisetum Mackaii*, Newman. *Equis. elongatum*, Hooker, 'London Journal of Botany,' 42; but neither of Willdenow nor Reichenbach.

*γ. Equisetum variegatum*, Schleicher.

ALTHOUGH our more eminent modern botanists have considered as distinct species the plants which I have here given as varieties; and although I most willingly admit that each, in its extreme state, is without difficulty to be distinguished from the others; yet I am totally unable to find *constant* characters by which to distinguish either: I shall therefore treat of them as constituting but a single species, figuring nevertheless each peculiar form of its natural size, and giving on one block magnified representations of those characters which have been pointed out as *distinctive*.

The figures usually quoted as representing this plant are so incorrect that they can only be referred to with doubt. Tragus[*] and Dalechamp,[†] whose figures are usually quoted as representations of Equisetum hyemale, have adorned the upper part of each stem with whorls of short branches, which give the plant a very extraordinary appearance, and suggest the idea of their being intended for Equisetum limosum or Hippuris vulgaris, the upper part of the stems much resembling the latter plant; and it should be added that Tragus assigns to his figure the name of Hippuris. It should however be observed that one of these figures is a servile copy from the other, the outline having been traced and transferred to another block, by which the figure has been reversed. The figure in Matthiolus,[‡] also supposed to refer to this species, may possibly be intended for the *variegatum* of Schleicher; but I can only venture this as a suggestion, for it is by no means characteristic of any plant with which I am acquainted. Gerarde's figure[§] evidently represents variegatum: the specimen selected for the purpose being more than usually divided: the learned author however ascribes to his plant the property usually assigned exclusively to the normal form, speaking of it as the "small and naked shave-grasse wherewith Fletchers and Combemakers doe rub and polish their work."[‖] Camerarius[¶] also represents variegatum. The figure in 'English Botany'[**] appears to me to be spoiled by an attempt to represent the roughness of the stem, which of course cannot be accomplished. That in the 'Flora Londinensis'[††] is the most characteristic I have met with.

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[*] Tragus, Hieron, 692.
[†] Dalechamp, Historia, 1071.
[‡] Matt. Valg. ii. 375.
[§] Ger. Em. 1113.
[‖] Ger. Em. l. c.
[¶] Camer. Epit. 1586.
[**] Eng. Bot. 915.
[††] Flora Londinensis, 161.

The medicinal and other properties of this Equisetum have been amply recorded by the earlier herbalists, but most of them appear to quote Galen as their authority. In consequence of the confused nomenclature and very indifferent figures of these authors, the properties in question become very doubtful as intended for the present species; and even were they so intended, all faith in them, as far as regards medicine, has long been exploded. Tragus* tells us that it is most useful as a medicine, taken internally or externally; internally its properties appear to be somewhat astringent, but it has long been out of use: held to the nostrils and applied at the same time on the neck, it stops bleeding at the nose, and when bruised and laid on a recent wound it staunches the blood.

We are told by Lightfoot† that "some entertain an opinion that if cows chance to feed upon" this Equisetum "their teeth will drop out: how far this may be true," he adds, "I know not, but I am persuaded that the pasture must be very bad where they are compelled to eat such food." Sir William Hooker appears to give the plant credit for this injurious quality: he says "that though while to sheep it proves injurious, and that the teeth of cows who eat it soon fall out, it is wholesome for horses."‡

The stems of this plant have for centuries been used by artificers in smoothing the surface of wood, bone, and even metal, previously to giving these substances their final polish. This employment of the stem was noticed by Gerarde in the passage already quoted. Haller* also mentions it as being in his day used in common with other species of Equisetum to polish metal vessels, but speaks of this species as being the roughest and best. We are further told by Lightfoot† that "in Northumberland the dairymaids scour their milk-pails with it." The value of this plant for the purpose of smoothing or polishing is not, however, merely traditionary, or, like its medicinal virtues, imaginary: it is still used for polishing wood, bone, ivory, and various metals, particularly brass; for this purpose it is imported, under the name of "Dutch Rush," in large quantities, from Holland, where it is grown on the banks of canals and on the sea ramparts, which are often bound together and consolidated by its strong and matted roots. Bundles of this imported Dutch Rush are exposed for sale by many London shopkeepers. They may be seen at Mr. Woodward's, Old Compton St., corner of Frith St., Soho. I find however that a doubt exists with some excellent botanists, whether the Dutch Rush as cultivated in Holland is identical with either of the plants which I have enumerated. Mr. Shepherd, the curator of the Liverpool Botanic Garden, having this plant in cultivation, has most kindly supplied me with specimens in a recent state. These are of much larger size than any British specimens of hyemale I have yet seen, and present structural characters more strikingly different from those of either of the British plants, than those by which these are distinguished from each other. The most obvious differences are the much greater number of striæ, amounting in some instances to thirty-two, and the colour of the sheath, which, at the base, is identical with that of the stem, and towards the apex paler or grey-green, the extreme margin being tipped with black. The differences, however, do not appear so great on examining a bundle of these rushes as exposed for sale; the stems being generally of much smaller size, and the sheaths variegated with black and white, as in our British specimens.

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* Vires ac temperamentum.

Hippuris ea quæ capillamento potius quam folio articulatur, magni in medicina et maxime probandi est usus, propter miram sanandi vim quam obtiret spissandi facultate prædita et utrisque corporis partibus utillissima.

Intrinsecus.

Hippuris cujus jam meminimus, sistendi sanguinem mira facultate pollet. Succus namque ejus bibitus profluvia sanguinis * * * * cohibet. * * Eadem potest aqua stillatitia per diem bis aut ter mensura trium cochlearium sumpta. Succus in vino potus tormina ventris sedat, tussim, orthopnæum, ruptaque adjuvat necnon dissectiones vesicæ et intestinorum enterocelasque.

Ad eadem herba vino decocta et calida pota facit. Potest vero vel herba vel radix, vino aquave ad omnes istas affectiones decoqui, pro ratione morbi.

Extrinsecus.

Succus herbe expressus naribusque inditus et cervici simul impositus sanguinem e naribus erumpentem sistit. Idem aqua stillatitia efficit.

Herba tusa ac cum succo suo imposita cruorem e vulneribus manantem supprimit ipsaque intra paucos dies glutinat teste Galeno qui Hippurim ad sanguinis rejectionem * * ad dysenterias et ad alia ventris profluvia generosum esse medicamentum asserit.

† Lightfoot, 'Flora Scotica,' 650.

‡ Flora Londinensis, 156.

### α. *Equisetum hyemale.*

This plant appears almost unknown in the midland and southern English counties. Indeed, throughout the kingdom it is but sparingly distributed, and may be considered a strictly local plant.— In Turner and Dillwyn's 'Botanists' Guide,' the following English habitats are recorded: — in Northumberland, Scott's wood, wood below Mill Green, and Heaton wood; in Cumberland, Lowgelt-bridge; in Durham, woods about Derwent bridge and Castle Eden Dean; in Yorkshire, woods at Castle Howard and Kirkham, Rigby woods near Pontefract, near Ingleton and Halifax, about Leeds, Hackfall, near Huby, Laver Banks and Mackershaw wood, on the banks of the Skell by Ripon; in Cheshire, near Arden Hall, in a wood close to the river; in Norfolk, on St. Faith's bog and Arming Hall wood, near Norwich; in Nottinghamshire, about the middle of Nettleworth Green, two miles from Mansfield, plentifully among the rushes; in Warwickshire, in a moist ditch near Middleton; in Cambridgeshire, Stretham Ferry and Gamlingay Bogs; in Bedfordshire, Potton Marshes and Ampthill Bogs; in Wiltshire, in a rivulet near Broadstitch Abbey, plentifully. The same authors have recorded two Welch habitats:—in Denbighshire, on the west side of the brook that runs from Henllan Mill into the river Elwy, about 300 yards from Trap Bridge, less than a mile from Garm, and in Flintshire, near Maesmynnan. Through the kindness of Dr. Greville, Dr. Balfour and Dr. Campbell, I have received specimens from several Scotch habitats, more particularly in the vicinity of Edinburgh. Mr. Kippist informs me that he has seen it in abundance in the woods about Corra Lyn, Lanarkshire. In Ireland, Mr. Mackay and Mr. Moore have found it in the counties Dublin and Wicklow.

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* Omnia Equiseta ad polienda vasa metallica adhibentur. Hoc tamen ut omnium asperrimum ita aurifabris et scriniariis suos ad usus optissimum est.

† Lightfoot, 'Flora Scotica,' 650.

The roots are strong, black and frequently divided; the rhizoma or underground stem is creeping, jointed, branched, and with age extends to a great length: at the joints it is solid, but between them it is partially hollow, the interior being occasionally more or less divided by longitudinal septa. The stems are generally erect, and, when divided, the branch is lateral, and issues from the main stem immediately below the base of one of the sheaths; a stem has rarely more than a single branch. The annexed figure represents a branched specimen, for which I am indebted to Dr. Greville: it is from Roslin woods, near Edinburgh.

The engraving at the head of this article represents a stem of fine but not extraordinary growth: the stem has been divided into six portions in order to exhibit the whole at a single view; its diameter and length, together with the distances between the sheaths, have been faithfully copied. The sheaths in the specimen figured are fourteen in number, the internodes decreasing in length towards either end. Both the internodes and sheaths are striated, the former more strongly so: the striæ are usually about twenty in number in luxuriant stems, but this number is liable to great variation, and appears to depend solely on the size of the stem, always decreasing towards its attenuated apex. The stems are hollow, and jointed or divided by a strong transverse septum at each of the sheaths: the striæ of the sheaths correspond in number with those of the internodes, and they terminate in an equal number of acute and elongate, but membranous and often deciduous teeth. Under certain but unascertained conditions these teeth become setiform and persistent, but in general all trace of them is early lost, the upper margin of the sheath exhibiting a regular series of rounded divisions, uniform in number with the striæ of the stem. The basal portion of each sheath is black, the central part whitish, and the upper part again black, the deciduous teeth excepted, the sides of which are membranous and transparent.

Sir Humphrey Davy detected in the stem of this plant an extraordinary quantity of silex; it is this that communicates the rough and file-like character to its exterior, from which it derives its value as an article of commerce. The silex appears in the form of minute crystals, and is arranged with beautiful and perfect regularity. Under the microscope we find on the stem numerous longitudinal series of elevations, each bearing a cup-shaped depression in its centre, at the bottom of which is placed a stoma. In the volume on Optics in Lardner's 'Cabinet Cyclopedia,' Dr. Brewster has recorded that he found each particle of silex to possess an axis of double refraction. We are told by botanists that the quantity of silex is so great and the particles are so closely set, that the whole of the vegetable matter may be removed by maceration without destroying the form of the plant.

The catkin is small, dark coloured, apiculate and terminal; its scales are from forty to fifty in number, and each is impressed with two or three vertical striæ. Before the scales have separated in their approach to maturity, these striæ are continuous throughout the catkin, even entering its terminal apiculus, which, in consequence, assumes a polyhedral figure: they generally correspond in number with the striæ of the last internode, thus leading to the conclusion that the catkin is a metamorphosed portion of the stem.

EDWARD NEWMAN.

(To be continued.)

## Art. LXXVII. — *List of Plants observed in the neighbourhood of Manchester.* By J. B. Wood, Esq. M.D.

Broughton, near Manchester,
March 10, 1842.

Sir,

I have noticed and read with much interest and pleasure the several local lists which have appeared in 'The Phytologist.' Of the utility of such catalogues I think there can be but one opinion, as it is only by such means that the Botany of the Kingdom can be satisfactorily known, the geographical range and distribution of the various species ascertained with any degree of accuracy, and the discovery of new habitats for some, hitherto considered unique or very rare, made public. Should you deem the accompanying list of the principal plants of the Flora of this neighbourhood (and I have mentioned only such as I conceived were not generally diffused, from the fear of trespassing too much on your pages) worthy of having a place in your valuable columns, I shall feel myself obliged by its insertion.

I am, Sir,
Yours most respectfully,
J. B. Wood, M.D.

To the Editor of 'The Phytologist'

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*Acorus Calamus.* Frequent in the neighbourhood, and flowering more or less freely every season.

*Agrimonia Eupatoria.* In meadows, hedge-banks &c. but not frequent.

*Agrostis vulgaris*, var. *γ. pumila.* On Baguley Moor.

*Alchemilla vulgaris.* In meadows, pastures, &c. very common.

*Alisma ranunculoides.* In ponds on Baguley Moor, plentiful.

*Anagallis tenella.* Common in boggy situations, Hale Moss, &c.

*Andromeda polifolia.* Abundant on all the peat-mosses.

*Anthemis arvensis.* Clover fields, occasionally.

*Aquilegia vulgaris.* Baguley Moor, Cotterrill Wood, but sparingly.

*Arctostaphylos Uva-ursi.* Upon the hills near Mottram and Glossop.

*Arundo Calamagrostis.* Rostherne Mere and near Staly-bridge, in plenty.

*Avena strigosa.* In cornfields &c. not unfrequent.

*Barbarea præcox.* In cultivated fields, plentiful.

*Bidens tripartita* and *cernua.* Frequent; var. *β. radiata*, abundant on Wilmslow Com.

*Bromus racemosus.* Very common in meadows and cultivated fields.

——— *secalinus.* In fields occasionally.

*Calamintha Acinos* and *Clinopodium.* Rather scarce; the former is rather plentiful in the neighbourhood of Bowdon.

*Callitriche autumnalis.* Reservoir near Mere Clough.

*Calluna vulgaris*, var. *β. hirsuta.* Baguley Moor, Boghart-hole Clough, &c.

*Campanula latifolia.* Frequent in many places, Broughton, &c.
*Cardamine amara.* In moist woods, not uncommon.
*Carduus nutans.* Near Disley, Cheshire.
—— *heterophyllus.* In a meadow above Mere Clough.
*Carex acuta.* Rostherne Mere, plentiful.
—— *ampullacea.* Abundant in many places.
—— *axillaris.* Near Leigh, very rare.
—— *binervis.* In various places near Prestwich and Pilkington.
—— *curta.* Upon peat-mosses and swampy places, very common.
—— *dioica.* Hale Moss, Baguley Moor and Knutsford Moor.
—— *elongata.* Abundant in three localities.
—— *fulva.* Baguley Moor.
—— *intermedia.* Rostherne Mere and near Moston, sparingly.
—— *lævigata.* In swampy fields and woods, frequent.
—— *muricata.* In the vicinity of Tildsley, plentiful.
—— *pendula.* Common in woods.
—— *Pseudo-cyperus.* On the margins of ponds, very common.
—— *pulicaris.* Rostherne Mere, Hale Moss, &c. plentiful.
—— *riparia.* Near Tildsley and at Rostherne Mere, in abundance.
—— *stricta.* In the greatest profusion on the borders of Rostherne Mere.
—— *strigosa.* Cotterill Wood, Reddish, Marple, &c., very plentiful.
—— *vesicaria.* Near Tildsley and at Mere Mere, in immense quantities.
*Carum Carui.* Occasionally in cultivated fields.
*Catabrosa aquatica.* About ponds and ditches, common.
*Centunculus minimus.* Wilmslow Common and Hale Moss.
*Cerastium semidecandrum.* Kersall-moor race-ground.
*Cerasus Padus.* Near Agecroft.
—— *avium.* Near Rostherne.
*Chrysosplenium alternifolium.* In boggy woods, not uncommon.
*Cicuta virosa.* In the vicinity of Rostherne.
*Cladium Mariscus.* On the borders of Rostherne Mere.
*Convallaria multiflora.* Near Mottram.
*Coriandrum sativum.* Found occasionally.
*Cornus sanguinea.* Woody banks of Rostherne Mere.
*Corydalis claviculata.* Frequent in hedges.
*Crepis paludosa.* In all our swampy woods, very common.
*Crocus nudiflorus.* Very common in meadows.
—— *vernus.* Near Hulme and Prestwich.
*Danthonia decumbens.* In dry heathy situations, plentiful.
*Daphne Laureola.* In Cotterill Wood.
*Dianthus Armeria.* Near Moston, (Miss Potts, Chester).
*Drosera anglica, longifolia* and *rotundifolia.* All very common on the Mosses.
*Elatine hexandra.* Mere Mere, Cheshire.
*Elymus europæus.* Cotterill Wood.
*Empetrum nigrum.* On all the mountainous districts, abundant.
*Epilobium angustifolium.* On hills near Bury.
*Epipactis latifolia.* In woods, but not common.
—— *palustris.* Knutsford Moor and near Moston.

*Eriophorum angustifolium, polystachion* and *vaginatum*. On all the peat-mosses in profusion.

*Festuca bromoides*. In sandy ground, very common.

——— *loliacea*. In meadows, frequent.

——— *elatior*. On the banks of the Irwell, near Agecroft.

*Fumaria capreolata*. Very common.

*Galeopsis versicolor*. In potato-fields &c., frequent.

*Genista anglica*. On heathy moors, not uncommon.

*Gentiana Amarella* and *campestris*. Hills in Saddleworth.

——— *Pneumonanthe*. Baguley Moor and near Tildsley, frequent.

*Geranium Columbinum*. Not unfrequent.

*Geum rivale*. Mere Clough &c. in profusion.

*Gnaphalium dioicum*. Greenfield, and common on the neighbouring hills.

——— *rectum*. Near Agecroft, Boghart-hole Clough &c. plentiful.

*Gymnadenia albida*. In Saddleworth and near Pilkington.

——— *conopsea*. On hills behind Ashton-under-Lyne.

*Habenaria viridis*. Greenfield.

*Helosciadium inundatum*. Frequent.

*Hieracium sabaudum, sylvaticum* and *umbellatum*. Common.

*Hypericum Androsæmum*. In two or three localities.

——— *dubium*. Not uncommon.

——— *elodes*. Greenfield, very rare.

*Hypochœris glabra*. In cornfields about Bowdon, abundant.

*Impatiens Noli-me-tangere*. Bamford Wood, near Heywood, in great abundance, and *undoubtedly wild*.

*Isolepis fluitans*. Ponds on Baguley Moor, plentiful.

*Lactuca muralis*. Moist shady woods, not uncommon.

*Lamium amplexicaule* and *incisum*. The former about Bowdon, the latter in many places.

*Lathræa squamaria*. Near Northen, Eccles and Broughton.

*Lemna trisulca* and *polyrhiza*. Ponds in various places.

*Lepidium Smithii*. Altrincham and other places, but local.

*Limosella aquatica*. Mere Mere, Cheshire.

*Listera cordata*. Hills near Bury.

*Littorella lacustris*. Baguley Moor, Mere Mere, &c.

*Lolium multiflorum*. In cultivated fields and waste ground, *abundant*.

——— *temulentum*, var. *β. arvense*. Cornfields, not unfrequent.

*Lotus corniculatus*, var. *δ. tenuis*. Near Withington, and many other places.

*Luzula campestris*, var. *β. congesta*. Common on all our mosses.

*Lysimachia Nummularia*. Rostherne Mere.

*Malva moschata*. Frequent about Rostherne and Broughton.

*Matricaria Chamomilla*. Near Old Trafford in abundance.

*Mentha Pulegium*. Near the Railway-station at Godley.

——— *piperita*. Clayton vale, plentiful.

——— *rotundifolia*. Greenfield.

*Milium effusum*. In various woods, but not common.

*Myosotis versicolor*. Very common.

——— *sylvatica*. Cotterill Clough and other places, abundant.

*Myrica Gale.* Rostherne Mere, in profusion.
*Myriophyllum spicatum* and *verticillatum.* Both very common.
*Narcissus biflorus.* Near Pilkington, plentiful.
*Nasturtium amphibium.* Near Stretford.
——— *terrestre.* In wet places, common.
*Œnanthe crocata* and *Phellandrium.* In two or three localities.
*Papaver dubium.* In corn-fields, very common.
——— *Argemone.* Not unfrequent.
——— *Rhœas.* *Very rare.*
*Paris quadrifolia.* Cotterill Wood, plentiful.
*Parnassia palustris.* Hale Moss, abundantly.
*Pedicularis palustris.* In the same locality and at Rostherne Mere.
*Petasites vulgaris,* var. *β. hybrida.* The banks of the Irwell and Mersey are covered with the blossoms of this beautiful plant.
*Pinguicula vulgaris.* In swampy situations amongst the hills near Bury, &c.
*Polygonum Bistorta.* In meadows, very common.
——— *minus.* On Hale Moss, Baguley Moor and Wilmslow Common, very plentiful.
*Potamogeton lucens.* In Rostherne Mere, in abundance,
——— *pectinatus* and *perfoliatus.* In the Worsley Canal, near Tildsley.
——— *pusillus,* and var. *β. compressus.* Both equally common.
——— *rufescens.* Abundant in many places.
*Primula veris.* Near Altrincham, but comparatively rare.
*Radiola Millegrana.* Baguley Moor and Bowdon Moss.
*Ranunculus Lingua.* Seaman's moss-pits, Altrincham.
*Rhynchospora alba.* On all the peat-mosses abundantly.
*Ribes Grossularia.* In Cotterill Wood, unquestionably wild.
—— *rubrum.* Red-brow Clough.
*Rosa villosa.* Not uncommon.
—— *tomentosa.* Near Agecroft, rare.
*Rubus Chamæmorus.* Greenfield.
—— *saxatilis.* Ashworth wood.
—— *idæus.* In all our woods and copses, common.
—— *cæsius* and *suberectus.* Not unfrequent.
*Sanguisorba officinalis.* Near the banks of the river, very abundant.
*Saponaria officinalis.* On the banks of the Medlock, plentiful.
*Saxifraga granulata.* Near Agecroft and in Chorlton, but sparingly.
——— *Hirculus.* This still exists on Knutsford Moor, but is almost destroyed by the rapacity of some individuals who have dug it up *for sale,* in the most remorseless manner.
*Scirpus sylvaticus.* Very common.
*Scutellaria minor.* Near Bowdon, rare.
*Sedum Telephium.* In several localities.
*Senecio sylvaticus.* Very common.
——— *erucæfolius.* Near Bowdon and Mosley, very common.
*Silene inflata.* *Very rare.*
*Sium angustifolium.* About Altrincham and Bowdon, frequent.

*Sparganium ramosum*, *simplex* and *natans*. All very common; the latter is seldom seen in flower here.
*Stachys ambigua*, Sm. Mere Clough, abundantly.
*Stellaria aquatica*. Near Chorlton, but rare.
——— *nemorum*. Moist shady situations on the banks of rivers, *extremely abundant*.
*Stratiotes aloides*. In ponds, frequent.
*Teesdalia nudicaulis*. About Bowdon, in several places.
*Thrincia hirta*. Near Tildsley, abundant.
*Trifolium medium*. Woods and hedges, plentiful.
——— *filiforme*, Sm. Near Bucklow Hill.
*Triticum caninum*. About Chorlton &c. plentiful.
*Trollius europæus*. Near Pilsworth in abundance.
*Typha angustifolia*. Common near Stretford &c.
*Utricularia minor*. Hale Moss and Baguley Moor, plentiful.
*Vaccinium Myrtillus*, *Oxycoccos* and *Vitis-idæa*. Common on heaths and moors.
*Valeriana dioica*. Near Reddish and in Broughton, abundantly.
*Valerianella dentata*. In cornfields &c. not unfrequent.
*Veronica montana* and *scutellata*. Abundant in many places.
*Vicia sylvatica*. Cotterill Wood.
—— *tetraspermum*. In cornfields, occasionally.
*Villarsia nymphæoides*. Near Chorlton, but originally introduced.
*Vinca minor*. In woods near Marple, and near Agecroft.
*Viola odorata*. Hough-end, but rare.
—— *palustris*. In swampy situations, very frequent.
—— *lutea*. In mountainous pastures behind Mottram.
*Wahlenbergia hederacea*. Near Mottram, but rare.

### FERNS AND THEIR ALLIES.

*Allosorus crispus*. Fo-edge, near Bury, in great profusion.
*Asplenium Ruta-muraria*. Hough-end, but not common.
——— *Trichomanes*. Arden-Hall, near Reddish.
*Botrychium Lunaria*. Rough upland pastures in several localities.
*Cystopteris fragilis*. Rostherne Church.
——— *dentata*. Salebark and Greenfield, in both places very rare.
*Equisetum sylvaticum*. In woods and hedges, very abundant.
*Hymenophyllum Tunbridgense* and *Wilsoni*. Both found on rocks at Greenfield, but very sparingly.
*Lastræa Oreopteris*. In various woods, common.
——— *spinulosa*. Baguley Moor, rare.
——— *Thelypteris*. On the borders of Rostherne Mere in great plenty.
*Lycopodium alpinum*, *Selago* and *clavatum*. Frequent on the high mountainous moors near Bury, and at Greenfield.
——— *inundatum*. Baguley Moor, plentiful.
*Osmunda regalis*. In the same place as the last, and on Chat Moss.
*Pilularia globulifera*. In ponds &c. on Baguley Moor.
*Polypodium Phegopteris*. In Mere Clough, Boghart-hole Clough &c. in abundance.
——— *Dryopteris*. In the same localities, but more sparingly.

*Polystichum aculeatum.* Cotterill Wood.
———— *angulare.* In the woods at Marple abundantly.
———— *lobatum.* In the same place, and also in Bamford Wood.
*Scolopendrium vulgare.* Cotterill Wood and other places.

## ART. LXXVIII. — *Analytical Notice of the 'Transactions of the Botanical Society.' Vol.* i. *pt.* i. Edinburgh: Machlachlan, Stewart, & Co.; H. Baillière, London; Smith & Son, Glasgow; W. Curry, jun. & Co. Dublin; J. B. Baillière, Paris; J. A. G. Weigel, Leipzig. 1841.

### I. — *Monograph of the British Atripliceæ.* By CHARLES C. BABINGTON, M.A., F.L.S., F.B.S., F.G.S., &c.

"MUCH difficulty attends the determination of the species in the genus Atriplex, owing to the great tendency of some of their parts to become disproportionally enlarged when the plants are growing upon a richer soil than that to which they are accustomed. The leaves become thick and fleshy, and their form so much changed as nearly to obliterate the characters drawn from their shape and outline of margin; an erect plant may become prostrate, or a slender and elegant one may be so much thickened, and so irregularly swollen in some or all of its parts, as scarcely to be identified by any person who has not made these plants his peculiar study. It must therefore be manifest that, in determining the species, those specimens should be selected for examination which are least affected by these changes. This is more particularly requisite in considering the calyx and fruit; for in almost all the species a few of the calyces upon an individual are often very much enlarged and even become foliaceous, in which cases the fruit, if produced at all, is much larger than in the neighbouring calyces which are of the usual size, and the seed is often tuberculated and opaque, when its being smooth and shining is characteristic of the species. It is probable that these unnaturally enlarged fruits are monstrosities, and would not germinate. These changes are generally the result of extreme luxuriance, caused by the plants growing upon richly manured soil or the muddy sea-shore, when their natural locality is waste land, or the shingly or rocky beach."—p. 5.

The author remarks that he has ventured on the attempt to elucidate the species belonging to this tribe, "only after a careful and long-continued study of the living plants:" and that it is probable that many even of our most eminent botanists will say — "if the plants are indeed of so very variable a character as is represented in this paper, and the distinctions between them so uncertainly defined, they ought not to be divided to so great an extent, and that several of the species which I consider as distinct, must be looked upon as only forms of variable plants."

Mr. Babington meets these objections by observing that he cannot but think he has done well in keeping distinct all the species here described; for, however anomalous may be their forms, he can always refer the living plants to their respective species: and that if they are not to be separated by the characters employed in this paper, they must be reduced to fewer species than the author conceives would be recommended by "the most energetic 'lumper of species.'"

In Meyer's 'Flora Altaica' the European species of Chenopodiaceæ are divided into four tribes, which may be thus characterized.

1. *Salsoleæ.* Seeds with little or no albumen; embryo spiral. British genera, *Salsola* and *Schoberia.*
2. *Chenopodiaceæ.* Seeds albuminous; embryo forming a ring round the albumen; (in these points agreeing with the two following tribes): flowers hermaphrodite: stems not jointed. British genera, *Chenopodium* and *Blitum.*
3. *Salicorneæ.* Flowers hermaphrodite: stem jointed. British genus, *Salicornia.*
4. *Atripliceæ.* Flowers diœcious or monœcious, sometimes with a few hermaphrodite flowers intermixed: stems not jointed. British genera, *Atriplex* and *Halimus.*

Mr. Babington remarks — "These tribes are well marked by their very different habit, although in description their characters may not appear to be peculiarly strong:" and then proceeds to describe the genera and species to which the paper refers.

I. ATRIPLEX, *Linn.* Flowers polygamous: female perigone compressed, formed of two distinct or more or less connate leaves: stigmas two: pericarp membranaceous, free: seed vertical, either attached near the base by a lateral hilum, or towards the centre by means of an elongated funiculus; testa crustaceous; radicle inferior, ascending. "*Wallr. Sched. Crit.* 114. *Nees ab Esenbeck, Gen. Pl. Germ. Icon. (Monochlam.)* 63."

The genus Atriplex, as thus restricted, may be again divided into the two following sections.

1. *Euatriplex*, Meyer, (the true Atriplices). Leaves of the female perigone two, distinct to the very base: seed vertical; horizontal in the hermaphrodite flowers, which are rarely produced.
2. *Schizotheca*, Meyer. Flowers monœcious, (true hermaphrodite flowers never appearing): leaves of the female perigone more or less connected below, the attachment not extending above the lower half.

"In both of these sections, only the latter of which has as yet been detected amongst the native plants of Britain, the pericarp is quite detached from the perigone, the testa is crustaceous, and the radicle, although always ascending, is never terminal." — 3.

1. *Atriplex littoralis*, Linn. Root fibrous. Stem erect, two or three feet high, smooth, angular; branches numerous, alternate, erect. Leaves linear-lanceolate, en-

tire, or sometimes slightly toothed, stalked. Spikes long, erect, clusters distinct, of from 4—12 or more flowers. Enlarged calyx-valves rhomboidal-ovate, acute, toothed, with spreading tubercles on the back; terminal point rather prominent. Seeds black, smooth and shining. "*Linn. Sp. Pl.* 1494! *Bluff et Fingerh. Comp. Fl. Germ.* (ed. 2), i. pt. 1. 446; *Reich. Fl. Excurs.* 577; *Sm. Eng. Fl.* iv. 260; *Eng. Bot.* 708; *Huds. Fl. Ang.* (ed. 2). 444; *Wahl. Suec.* 661; *Fl. Alt.* iv. 311; *Dethrading, Cons. Megap.* 24; *Bab. Prim. Fl. Sarn.* 81."

On the sea-coast in many places. Annual. July to November.

2. ***Atriplex marina***, Linn. Root fibrous. Stem erect, two or three feet high, smooth, angular; branches numerous, alternate, erect. Leaves ovate-lanceolate, irregularly toothed, sometimes nearly entire; in luxuriant specimens the lower leaves are nearly ovate, inciso-serrate: stalked. Spikes long, erect, clusters distant, of from 3—6 or 8 flowers. Enlarged calyx valves somewhat cordate-triangular, obtuse, toothed, tuberculated on the back. Seeds smooth and shining, black, with a slight reddish tinge, fuscous-red when immature. "*Linn. Mantissa*, 300; *Bluff et Fingerh.* 446; *Reich.* 577; *Dethard.* 24; *Bab. Prim.* 81. A. serrata, *Huds.* (ed. 2) 444. A. littoralis, *β. Wahl.* 661; *Sm. Engl. Fl.* iv. 260."

On the sea-coast in many places. Annual. July to September.

Mr. Babington remarks—"These two plants (*littoralis* and *marina*) differ from all the following, by the total want of larger lobes at the base of their leaves. The latter species has long been considered as only a variety of the former, although originally distinguished by Linnæus, and also adopted as a species by Hudson. Within the last few years, they have been again distinguished upon the authority of the observations of Dethrading as published in his Conspectus quoted above; and I have much pleasure in recording, in confirmation of their distinctness, the valuable and independent observations of Mr. Power."—p. 6.

It is probable that in a living state the plants may differ more than they do in description; the chief points of distinction appear to be that in A. littoralis the enlarged calyx-valves have "the apex in general considerably projecting and acute, each in an advanced state *remarkably diverging* from its fellow, and giving a peculiarly rough aspect to the plant," the tubercles on the margins of the valves are not coloured, and "the whole plant is more or less covered with a *greenish-hoary* mealiness:" while in *A. marina* the calyx-valves have "an obtuse contour at the apex, which scarcely at all projects from the outline of the valve, in many cases appearing like a mere continuation of the marginal denticulations: they are *closed* when mature:" the points of the tubercles on the margins of the valves are generally reddish, "and the whole fruit and the fruit-stalks have a peculiar *yellowish* mealiness."

3. ***Atriplex angustifolia***, Sm.! Stem erect or prostrate, nearly round, striated, usually with long, simple, opposite branches; each branch and the main stem termi-

nating in a wand-like, interrupted, subsimple spike of distant few-flowered clusters. Leaves lanceolate, entire; lower ones hastate, the lobes ascending from a wedge-shaped base, all shortly stalked. Enlarged calyx-valves rhomboidal, acute, entire; lateral angles acute, prominent, ascending, without tubercles on the back, reticulated, rather longer than the smooth, shining, black seeds. "*Sm. Eng. Fl.* iv. 258; *Wallr. Sched. Crit.* 116; *Eng. Bot.* 1774; *DC. Fl. Fr.* v. 371. A. patula, *Huds.* 443; *With. Arr.* ii. 275; *Wahl.* 660."

Common on waste and cultivated land. Annual. July to October.

"In its normal state the whole of this plant is slender and delicate, the leaves thin, and the calyx of the fruit small, but sometimes the stems and leaves become thickened and very fleshy, and the calyces exceedingly enlarged (I have seen them an inch in length, and broad in proportion) and even tubercled. In this monstrous form the fruit is usually transformed into leaves, and no seed is produced. Various intermediate states occur, and often only a few of the calyces become monstrous, whilst the rest of the plant retains the normal appearance."—p. 7.

4. *Atriplex erecta*, Huds. Stem most frequently erect, sometimes weak and prostrate, quadrangular, striated, often reddish, 12 or 18 inches high; branches mostly opposite, simple, ascending. Leaves mostly opposite; lower leaves ovate-oblong, wedge-shaped at the base, with ascending lobes, irregularly dentate, sinuato-dentate or inciso-dentate; upper leaves lanceolate or nearly linear, entire; all pale green above, mealy beneath. Spikes many-flowered, terminal and axillary, shortly branched; flowers in small, round, dense clusters, usually so close as to appear continuous on the spike, in which respect this plant differs from Atr. angustifolia. Enlarged calyx-valves rhomboidal, acute, toothed above the lateral angles, which are acute, sometimes prominent; valves more or less muricated on the back, scarcely longer than the seed, densely clothed with minute, pellucid, crystalline glands, which dry into a mealy coat. Seed black, smooth, shining, half the size of that of Atr. patula. "*Huds. Fl. Ang.* (ed. 1) 376; *Sm. Eng. Bot.* 2223! *Eng. Fl.* iv. 259; *DC. Fl. Fr.* v. 371; *Bab. Prim.* 82; *Fl. Bath. Suppl.* 88. A. angustifolia, *Drej. Fl. Hafn.* 106."

Common on cultivated land throughout England. Annual. July to October.

It is probable that this plant is frequently confounded with Atr. angustifolia, which Mr. Babington says it sometimes resembles in the lower leaves being without teeth and the spikes being interrupted, but from that species "it is still clearly distinguishable by its compound spike, calyx-valves and leaves." He also observes: —

"Our plant is certainly the Atr. erecta of Hudson and Smith, of which the only authentic specimen, preserved in Sir J. E. Smith's herbarium, is apparently only the upper part of a very luxuriant plant; in it the calyx of the fruit is much more spinous than is usually the case, and the panicle larger and more dense."—p. 8.

5. *Atriplex prostrata*, "Bouch." Stem prostrate, quadrangular, somewhat striated, much branched, branches prostrate. Leaves nearly opposite, fleshy, hastate-triangular, entire or with few teeth, lateral lobes horizontal or slightly descending, the base

truncate, margins entire or rarely sinuato-dentate; in the intermediate leaves the lateral lobes are ascending, the base wedge-shaped, and one or two teeth are generally to be found above the lobes; the uppermost leaves are lanceolate and entire, gradually decreasing until they become very small nearly linear bracteas: all the leaves, as well as the other parts of the plant more or less clothed with mealiness. Spikes terminal and axillary, numerous, slightly branched, clusters small and distinct, as in Atr. patula and angustifolia. Valves of the calyx of the fruit cordate-triangular, often scarcely longer than broad, and but just covering the seed, sometimes more nearly cordate, rarely much elongated and with two prominent angles between the lateral ones and the apex. The valves are often unsymmetrical in form, usually slightly toothed. Seeds black, smooth, shining, small. "'*Bouch. Fl. Alb.* 76;' *DC. Fl. Fr.* iii. 387; *Bot. Gall.* 398; *Lois. Fl. Gall.* (ed. 2.) i. 218. A. triangularis, *Willd. Sp. Pl.* iv. 965? *Reich.* 578? A. latifolia, *Wahl.* 660? *Drej. Fl. Hafn.* 107?"

Common on the sea-coast. Annual. August to October.

There appears to be much uncertainty respecting this plant. None of the descriptions of the authors referred to exactly agree with it, although those of Wahlenberg and Drejer's Atr. latifolia come nearer than any others. Mr. Babington, considering our plant to be identical with DeCandolle's Atr. prostrata, notwithstanding the imperfect description, has preferred adopting that name rather than to "introduce another species into this difficult genus."

6. *Atriplex patula*, Linn. Stem erect, quadrangular, striated; branches ascending. Lower leaves ovate-hastate, toothed, lobes horizontal; upper leaves lanceolate, usually entire. Spikes terminal and axillary, long, wand-like; clusters of flowers numerous, distinct. Valves of the calyx of the fruit rhomboidal triangular, often entire, usually slightly muricated on the back, lateral angles obtuse; much longer than the fruit. Seeds opaque, rough, often tinged with red. "*Linn.* 1494! *Sm. Eng. Bot.* 936! *Eng. Fl.* iv. 257; *Reich.* 577; *Bluff et Fing.* 445; *Wallr. Sched.* 115; *Fl. Alt.* 310; *DC. Fl. Fr.* v. 370; *Bab. Prim.* 83. A. hastata, *Huds.* 443; *With.* 274. A. latifolia, β. elatior, *Wahl.* 660."

Common throughout the country. Annual. June to October.

This plant is very variable in luxuriance; in a rich soil the calyx-valves often take the character of leaves, and then "several sets of apparent calyces are found within each other, with one or more enlarged fruits inclosed in them." Attention must also be paid to the characters of Atr. angustifolia, prostrata, deltoidea, microsperma and rosea, in order to avoid confounding them with the present species.

7. *Atriplex microsperma*, Walds. et Kit. Stem erect or ascending, striated, angular; branches ascending. Leaves opposite; lower ones ovate-hastate, toothed, lobes prominent, horizontal; upper leaves small, linear-lanceolate, almost awl-shaped, very acute, entire, with a prominent, acute, horizontal lobe on each side of the truncate base. Flowers in small, close clusters, forming on the stem a compound, branched, terminal panicle; on the branches they take the form of branched spikes. Valves of

the calyx of the fruit ovate, triangular, acute, entire, rugose but very rarely tuberculated on the back, rather longer than the fruit. Seed smooth, shining, black, about half the size of that of A. patula. " *W. et K. Plant. Hung. Rar.* t. 250; *Reich.* 578; *Bab. Fl. Bath. Suppl.* 88; *Sadl. Fl. Pest.* 475. A. ruderalis, *Wallr. Sched.* 115; *Bluff et Fingerh.* 445."

"On waste ground near Bath. Wouldham in Kent, *Mr. C. A. Stevens*. Annual. July to September."

8. *Atriplex deltoidea*, Bab. Root fibrous. Stem erect, quadrangular, striated, branched; branches ascending, one or two feet high, often tinged with red. Leaves mostly opposite, all triangular-hastate, truncate at the base, lobes descending, irregularly dentate or sinuate-dentate, sometimes nearly entire, apex acute-angled, dull green above, mealy beneath; uppermost leaves or bracteas usually of the same form as the lower ones, only longer in proportion to their breadth, rarely entire, with a tendency to a wedge-shaped base. Spikes numerous, branched, densely flowered, forming a large terminal panicle, each lateral branch also terminates in a branched spike. Clusters of flowers small, round, close together. Calyx of the fruit small, ovate-triangular, sometimes almost cordate below, acute, truncate, strongly muricated, slightly stalked, but little longer than the fruit, thickly covered with a fine mealy coat. Seed black, smooth, shining, about half as large as that of A. patula, reddish when immature. Upper part of the plant covered with a minute crystalline afterwards mealy coat.—"*Bab. Prim. Fl. Sarn.* 83; *Leight. Fl. Shrop.*! 501."

"On cultivated and waste land near London, in Kent, Leicestershire, and near Maidenhead. Annual. July to October."

"Having now studied this plant during three successive autumns, I am confirmed in my opinion, that it is a distinct and unnoticed species. It is now found to be rather a common native of England."—p. 13.

9. *Atriplex rosea*, Linn. Stems diffuse, procumbent or ascending, usually slender, square, striated, sometimes much thickened and fleshy, clothed with whitish meal in common with all parts of the plant, often beautifully tinged with red or purple, with spreading branches. Leaves ovate-triangular, with two large, prominent, horizontal lobes at the base, irregularly sinuato-dentate, very white and mealy beneath; upper leaves similar in general character, but with the lobes smaller in proportion and the leaf lanceolate: in the more fleshy plants the leaves are more triangular and less lobed, the upper ones being more lanceolate and nearly entire; in a straggling much branched form occurring on muddy shores, all the leaves are lanceolate and nearly entire, a few only having small basal lobes. Clusters few-flowered, small, distinct, either collected towards the end of the stem and branches into a somewhat spicate form, each being subtended by a small lanceolate bractea; or a few of the uppermost clusters only are bracteated, the rest being axillary; or else the clusters are all axillary, except the two or three last, and all so much scattered that the spicate appearance is quite lost. Calyx of the fruit large, rhomboidal, acute, toothed in the upper part, with a double series of tubercles on the back, sometimes nearly smooth, varying in outline even on the same plant. Seed large, tubercularly rugose, opaque, tinged with red. " *Linn. Sp. Pl.* 1493; *Koch*, 611; *Bluff et Fingerh.* 443; *DC. Bot. Gall.* 398; *Fl. Alt.* 314; *Bab. Prim.* 84; *Sadl. Pest.* 476. A. alba, *Reich.*! A. patula, β. *Smith, Fl. Br.* iii. 1092!

Common on the sea-coast in rocky, gravelly, or muddy situations. Annual. July to September.

Apparently the most variable of the genus, but when once known easily distinguishable from all the other species. It often approaches Atr. patula and angustifolia in the form of the leaves and the scattered clusters of flowers, and Atr. laciniata in the form of its fruit; from all these the very large lobes of the leaves, the form and dentate margins of the calyx, and the scattered flowers will serve to distinguish it.

10. *Atriplex laciniata*, Linn.! Whole plant covered with whitish meal. Stems diffuse, prostrate, branches spreading. Leaves irregular in outline, between triangular and rhomboidal, irregularly toothed and lobed, hoary beneath. Clusters of flowers small, mostly collected into leafless terminal spikes, a few only being seated in the axils of the upper leaves. Calyx of the fruit rhomboidal, with each lateral angle broadly truncate; the valves vary in breadth, but retain the general form, three-ribbed on the back, lateral ribs sometimes tuberculated towards the extremity. Seeds rough and opaque. "*Linn.* 1494; *Sm. Eng. Bot.* 165; *Eng. Fl.* iv. 257; *Wahl.* 661; *Koch*, 611; *Bluff et Fingerh.* 414; *Fl. Alt.* 313; *Bab. Prim.* 84; *Sadl. Fl. Pesth.* 476."

Common on the sea-coast. Annual. July to September.

II. Halimus, *Wallr.** Flowers monœcious: female perigone compressed, leaves two, tridentate, connate to the apex: stigmas two: pericarp very slender, when mature adhering to the tube of the perigone: seed vertical, pendulous by an elongated funiculus, ascending to the apex; testa membranaceous; radicle terminal, porrected. "*Wallr. Sched. Crit.* 117; '*Wahl. Act. Upsal.* viii. p. 228, 254, t. 5, f. 2;' *Fl. Suec.* 662; *Nees ab Esenbeck Gen. Pl. Germ. Icon.* (*Monochlam.*) 64."

"In these plants the perigone is contracted below into a peduncle, which in H. pedunculatus is elongate, and although short, is still present in H. portulacoides."—p. 4.

1. *Halimus pedunculatus*, Wallr. Stem herbaceous, erect, flexuose, shortly branched. Leaves obovate-oblong, obtuse, entire, contracted at the base into a short petiole, upper ones of the same form but narrower. Flowers scattered, in a lax terminal spike, sessile; as the fruit ripens the base of the calyx becomes lengthened into a long slender peduncle, the upper part taking an inversely wedge-shaped form, with two obtuse lobes and an acute intermediate point. "*Wallr. Sched. Crit.* 117; *Reich.* 576; *Bluff et Fingerh.* 442; *Koch*, 609. Atriplex pedunculata, *Linn.* 1675! *Sm. Eng. Bot.* 232; *Eng. Fl.* iv. 261."

On the sea-coast, very rare. Annual. August and September.

Mr. Babington mentions the variations in length to which the peduncle appears subject; it being, in his English specimen from Yarmouth, nearly an inch long, while in a German specimen it scarcely exceeds a line: in the latter, too, the expanded part of the calyx differs in form, the lateral lobes being rounded, and not longer than the intermediate one. The author remarks, — "Can there be two species confounded under this? Unfortunately the extreme rarity of the plant puts great difficulty in the way of the determination of this point."

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* This genus was founded by Wallroth in his 'Schedulæ Criticæ,' 117, for the reception of Atriplex pedunculatus, *Linn.*; and he observes — "Perhaps Atr. portulacoides may also belong to this genus; I have not seen the fruit."

2. *Halimus portulacoides*, Wallr. Stem erect or ascending, woody, branched. Leaves oblong-lanceolate, obtuse, entire, contracted below into a rather long petiole. Flowers in small clusters, forming a small, branched, terminal raceme. Peduncle very short; calyx of the fruit rounded below, widening upwards, three-lobed at the top, intermediate lobe usually longest; lower part of the back of the valves muricated.— "*Wallr.* 117; *Reich.* 576; *Fl. Germ. Exsic.* 870! *Bluff et Fingerh.* 442; *Koch.* 609. Atriplex portulacoides, *Linn.* 1493! *Sm. Eng. Bot.* 261; *Eng. Fl.* iv. 256; *Fl. Dan. tab.* 1889."

Common on the sea-shore. Perennial. August to October.

The existence of two species under the name of H. portulacoides, is indicated by Nees ab Esenbeck,—"the one, *borealis*, described by Roth in the 'Flora Germanica' and figured by Nolte in 'Flora Danica,' the other, *australis*, occurring in the South of France, and differing from the first in habit, in the narrower and more scaly leaves, and in the pointless calyces of the fruit."* Mr. Babington says —

> "Specimens which I possess from the south of Europe are unfortunately in much too young a state for the characters drawn from the fruit-bearing calyces (the only ones of value) to be determined. I suspect that specimens which I gathered upon Exmouth Warren, in Devonshire, in September, 1829, will prove to be this latter plant; for although the fruit, from being young, will not allow a certain conclusion to be drawn, yet, as far as I can ascertain, the calyx is totally without tubercles upon its back, and it appears to be much less rounded below than is usual in the true H. portulacoides. * * It is much to be wished that those botanists who may visit the southern coasts of Britain, would endeavour to determine the existence of the latter plant (H. australis) upon our shores, and also that they would turn their attention to the value of the character drawn from the muricated calyces in the genus Halimus."—p. 16.

Each species is illustrated by very neatly engraved figures in outline, of the lower leaves, the leaves near the top of the stems, and the enlarged calyces of the fruit.

(To be continued).

## Art. LXXIX.— *Varieties.*

179. *Additions to the List of Wharfedale Mosses.* I returned a short time since from a two days' excursion in Wharfedale. This excursion was partly a geological

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* Genera Plantarum Floræ Germanicæ Iconibus Illustrata, (Monochlam.) No. 64.

one, and partly made in order to renew my acquaintance with a few of the mosses and lichens which grow in the neighbourhood of Bolton-bridge, Barden, &c. With the idea that local lists of plants often prove interesting to botanists, I now send you the following additions to the list given by Mr. Spruce, (Phytol. 197). I hope my friend Mr. S. will pardon the use of the more practical names of Leighton's Catalogue, in preference to those of Hedwig, Bridel, &c.; for would it not have been just as well understood if he had called his Grimmia rivularis G. apocarpa, var. *a*. nigro-viridis, Hooker, and for Weissia fugax said W. striata, var. *a*. minor, Hooker? For the Weissia striata of Hooker is Bryum crispatum of Dickson, Grimmia striata of Schrader, Weissia Schisti of Schwægrichen, and the Grimmia Schisti of the 'Flora Britannica.' Mr. Spruce may be right, but if we carry out this plan where are we to stop? for so great is the multiplication of synonymes in this department of Botany, that it has become a matter of difficulty in some cases to decide which name ought to be adopted.

*Mosses.*

- Andræa Rothii
- Phascum cuspidatum
    - alternifolium
- Gymnostomum rupestre
- Anictangium ciliatum
- Encalypta streptocarpa
- Weissia nuda
    - lanceolata
    - acuta
- Grimmia apocarpa *β*. stricta
- Trichostomum fasciculare
    - heterostichum
- Dicranum adiantoides
    - flexuosum
        - *β*. nigro-viride
    - squarrosum
    - pellucidum
    - scoparium
        - *β*. majus
        - *γ*. fuscescens
- Polytrichum piliferum
    - alpinum
- Orthotrichum cupulatum
    - anomalum
    - affine
    - diaphanum
    - striatum
    - crispum
    - pulchellum
- Bryum androgynum
    - turbinatum
- Bryum nutans
    - ventricosum
    - roseum
    - ligulatum
    - punctatum
    - rostratum
- Leucodon sciuroides
- Fontinalis squarrosa
- Hypnum complanatum
    - serpens
    - polyanthos
    - sericeum
    - curvatum
    - splendens
    - flagellare
    - ruscifolium
    - striatum
    - triquetrum
    - molluscum
    - multiflorum

*Lichens.*

- Verrucaria rupestris
- Pertusaria communis
    - fallax
- Thelotrema lepadinum
- Variolaria discoidea
- Urceolaria scruposa
- Lecanora atra
    - Parella
    - tartarea
- Squamaria elegans
    - candicans
- Parmelia caperata.
    - olivacea
    - pulverulenta
- Sticta crocata
    - sylvatica
- Peltidea horizontalis
    - aphthosa
    - canina
    - rufescens
    - polydactyla
- Borrera tenella
    - furfuracea
- Evernia prunastri
- Ramalina fraxinea
    - fastigiata
    - farinacea
- Sphærophoron coralloides
- Scyphophorus radiatus
    - gracilis
    - filiformis
    - deformis
    - digitatus
- Opegrapha scripta of *Lin*.
    - sixteen varieties

*Confervoideæ.*

- Conferva purpurascens
    - vesicata
- Draparnaldia glomerata
- Chætospora endiviæfolia
    - elegans
- Gomphonema ampullaceum

—*Samuel Gibson; Hebden Bridge, June* 5, 1842.

180. *Note on Carex tenella &c.* Perhaps you will allow me a little room to make a few remarks on Carex tenella, (Phytol. 234). Allowing that I have made some mis-

take in relying too implicitly on Schkuhr's figures, I must again say, without reference to those figures, that I am much surprized to find that after Sir W. J. Hooker has given us a description of C. tenella (which is verbatim from Smith), differing in every point from C. remota, that he should ever say "may it not be, &c." But I will just see what Sir J. E. Smith says on the subject. He first tells us that his plant is the C. tenella of Schk. Car. 23. t. P, p. f. 104, exclusive of *i. k. l:* he then tells us Willdenow and Wahlenberg refer the same plant of Schkuhr to C. loliacea, which he says differs in having a ribbed fruit, flat on one side, &c., this he also tells us is Schkuhr's C. gracilis, 48. t. E. f. 24. Then he goes on to say that it appears to him that Schkuhr has drawn the ripe fruit of his C. tenella, fig. i. k. l. from a starved specimen of C. loliacea, (Eng. Fl. i. [iv.] 83). I shall now refer to the three figures of Schkuhr, viz. i. k. l. and see how far they represent a *ribbed* fruit, which is *flat on one side*. The figures i. k. l. I find, as I expected, to represent a *smooth* fruit, *equally convex on each side:* here again I am under the painful necessity of either becoming a critic, or, what appears to me to be much worse, of believing that the starving of C. loliacea would change its ribbed plano-convex fruit into fruit which is smooth, and equally convex on both sides. For my own part I can no more believe that the starving of a plant will cause all these changes in the character, than that the starving of the soil in which they grow would make it produce new plants altogether.—*Id.*

181. *Note on Sagina maritima.* Perhaps it may not be out of place here to say where my Sagina maritima was gathered, so far as Warrington is concerned, (Phytol. 179 and 234). My first specimens are from the late Mr. E. Hobson, gathered at Curedly Marsh, in July, 1824. I have the plant from the same locality, gathered in 1840 and 1841 by two different persons. Again, I have Sagina maritima gathered by Mr. G. Crozeir, three and a half miles from Runcorn Gap, nearer to Warrington. Curedly Marsh, if I am rightly informed, is three and a half miles from Warrington; Runcorn Gap is eight miles from Warrington.—*Id.*

182. *Lotus angustissimus.* I take the liberty of sending you some (I am afraid rather poor) specimens of Lotus angustissimus. I found them near this place in rather a rocky soil a short time ago; they were rather scarce, I found only three.—*Robert Jordan; West Teignmouth, Devon, June* 21, 1842.

183. *Monograph of the British Roses.* I wish some one of your more able correspondents would kindly publish in your admirable work 'The Phytologist,' a monograph of the genus Rosa, with the varieties; I think, to a beginner, it is one of the most puzzling genera that can be.—*Id.*

184. *Trifolium filiforme.* Having for several years past narrowly watched this plant, I send for insertion in your periodical, the result of my enquiries, which will not be thought superfluous, when, even in so late a work as Leighton's 'Flora of Shropshire,' this truly distinct species is passed by as a mere variety of T. minus, and the figure in 'English Botany,' t. 1257, which is sufficiently expressive, is not at all alluded to. I can confirm the account of this plant given in the 'English Flora' by Sir J. E. Smith, as very faithful. The *racemose* inflorescence is an unfailing character, and there are not wanting other peculiarities by which it may be known from T. minus, Eng. Bot. t. 1256. The two plants grow together near Warrington in several places, and I am quite satisfied that the view taken of T. filiforme in Hooker's 'British Flora,' and especially in Leighton's work, is erroneous. It may easily be recognized by its more truly procumbent or prostrate habit, its deep yellow almost fulvous flowers and its dark green foliage. The common stalk of the leaves is always very short, about half as long

as the stipules. The corolla does not "become tawny as the seed ripens," but turns very pale, and owing to the narrowness of the petals, and especially of the standard (which is deeply emarginate), the legume or fruit as it ripens becomes quite conspicuous; whereas in T. minus it is entirely covered and concealed by the faded, deflexed and scariose standard, twice as broad as in T. filiforme, and furrowed. The diligent observer will find other points of difference, which I forbear to enumerate. I have sought in vain for intermediate states, and fully believe that the two species may be identified, if only a single flower of each be produced for that purpose. Your useful periodical will, I trust, raise up a host of *field-botanists*, who will put to the test all our dubious species, and point out the diagnostic characters of such as are genuine but imperfectly described. These will counteract the modern epidemic termed *hair-splitting*, which sometimes intrudes itself into your pages, and must be tolerated until persons infected with the disease have learned better. If any of your readers suspect me to have now fallen into this error, let him investigate the subject for himself. Nature will "deceive no student," if he diligently explore the volume with —

"A mind well strung and tuned
To contemplation, and within his reach,
A scene so friendly to his fav'rite task."

— *W. Wilson; Warrington, June* 23, 1842.

185. *Poa maritima and P. distans.* These are unquestionably distinct species, but unless studied at large in their native haunts, apt to be confounded. The creeping root of P. maritima is not always a very obvious character. The leaves in both species seem to be equally convolute; but those of P. maritima are destitute of the seven prominent rough ribs found on the leaves of P. distans. P. maritima also has the branches of the panicle smooth. In favourable situations the stems are quite prostrate, yielding an abundant and heavy crop of herbage. The produce of a single root will sometimes cover a space of more than three feet in diameter.—*Id.*

186. *Potamogeton setaceum of Hudson.* It has long been my opinion that this plant is no other than a narrow-leaved variety of the species now called P. oblongus. In peat-ditches on the borders of Risley Moss, near Warrington, this plant may be seen in various states, from the normal form to one with extremely narrow (linear-lanceolate) floating leaves; but when in that state the plant is sterile. P. oblongus is most prolific when growing in shallow water, and its broadest leaves are produced when the plant is almost left dry. In deep water it becomes P. setaceum of Hudson. Sir J. E. Smith, in 'English Botany,' t. 1985, remarks that no one knows this plant. —*Id.*

187. *Circæa alpina and C. lutetiana.* The first of these has each flower-stalk subtended by a bractea; while in the other species bracteas seem to be always absent.— Those who have opportunity for extended observation are requested to try the validity of this discriminative mark.—*Id.*

188. *Scleranthus perennis.* Never having seen this plant in a growing state, I offer with some hesitation the following remarks, which I trust some one will put to the test. In habit the plant seems very different from S. annuus; for instead of being repeatedly forked, with wide-spreading divisions and flowers in the forks of the stem, my specimens are mostly unbranched, never dichotomous, and the flowers are terminal, the leaves nearly erect and directed to one side, the whole plant having much of the habit of Spergula nodosa; so that if my specimens truly represent the species, they might be thus characterized: —

*S. annuus.* Stems dichotomous, leaves widely spreading, flowers in the forks of the stem.

*S. perennis.* Stems irregularly branched, leaves erect, unilateral, flowers terminal. —*Id.*

189. *Equisetum fluviatile.* There is a large patch of Equisetum fluviatile at Norwood. A road leads down the hill from the neighbourhood of the Woodman Inn towards Dulwich; and a little way down the hill, on the right hand, a quantity of the soil has been dug out, so as to leave a precipitous bank; on the acclivity of this bank, and about a small pond close by, the above-named plant grows in such luxuriance as to make a very handsome appearance. The whorls of dark green leaves, rising one above the other, can only be compared to a miniature grove of pines, growing up the side of some steep mountain in Germany.—*Wm. Ilott; Bromley, Kent, July* 2, 1842.

190. *Cucubalus baccifer*, (Phytol. 255). In the margin of my copy of Ray's Synopsis, against Cucubalus Plinii (C. baccifer) a former possessor of the book has written as a habitat *Springfield, Essex.* From the colour of the ink and style of writing it is evident this entry was made soon after the Dillenian edition of the Synopsis appeared. Perhaps some of your readers, on seeing this note, will search in the neighbourhood of Springfield for this plant, which may very readily have been overlooked. —*H. O. Stephens;* 78, *Old Market St., Bristol, July* 5, 1842.

191. *An Hour's Botanizing among the Falls of Lawers.* I should like to call the attention of your readers for a few minutes to this spot, not so much for its botanical treasures, as for the exquisite beauty of its scenery, which is, I fear, not much known to tourists, in consequence perhaps of being overlooked in the guide-books. It is, however, well worthy of being visited by every lover of picturesque scenery who passes this way, and to the botanist it is a little Garden of Eden. The principal Falls are situated in a rocky dell embosomed in a fir-wood, a few minutes walk up from the toll-bar of Lawers. Before reaching the wood a number of beautiful little cascades occur, several of them fourteen or fifteen feet high, some of them overshadowed by graceful ash-trees, and all margined by verdure-mantled rocks glowing with bright blossoms, among which Vicia sylvatica, Geranium sylvaticum and the "foxglove's purple bells" are conspicuous. Polypodium Phegopteris and Polygonum viviparum are also here in abundance. On entering the dark wood the rocks assume a wilder aspect, the roar of water greets the ear, and we soon come upon the principal falls, which, although by no means so imposing as those of Acharn, Moness or Bruar, possess a charm peculiar to themselves. In the upper one the water takes four distinct leaps, and in the lower is precipitated through a narrow channel over a perpendicular rock about fifty or sixty feet high, into a dark and dismal-looking pool beneath. The harmonious and soothing murmur of the smaller cascades is now exchanged for the roar of the cataract, the light of the sun is almost shut out by the overhanging woods, and the rocks that rise rugged and lofty are garnished profusely by tufts of ferns, and wild flowers of varied hue. The botanist will here find in great exuberance among the moist rocks the beautiful little Asplenium viride and the delicate Hymenophyllum Wilsoni. Hieracium paludosum is plentiful, and Circæa alpina, Alchemilla alpina, Oxyria reniformis, Melica uniflora, Festuca ovina, var. *ε.* vivipara, Melampyrum sylvaticum and pratense, occur more or less abundantly. In the crevices of the rocks may be gathered Hypnum commutatum in fine fructification, with plenty of Bryum turbinatum and ventricosum, Marchantia hemisphærica and the elegant Hypnum rufescens. Bryum julaceum grows by the sides of the stream, and many others might be detected by a

little closer examination. The dell all the way up is a perfect picture-gallery of sweet little water-falls, and an hour spent in exploring their varied beauties cannot fail to be pleasantly remembered in after years. To the lover of Flora it will furnish an excellent preface to the mighty volume of Ben Lawers, of which I will say something to your readers by and bye; and the first thing he should do on reaching this snug little inn, is to enquire for the *Falls of Lawers.—William Gardiner, jun.; Ben Lawers Inn, July* 6, 1842.

192. *Note on the British Pyrolæ.* The "Enquiry respecting Pyrola media" by Mr. Simpson (Phytol. 237), is one of which I should like to see many more examples. I am persuaded the two species P. media and rotundifolia are often confounded: with regard to the latter Hooker observes—"Yorkshire and many places in Scotland are assigned as stations for this plant; but it is so often confounded with the two following species (media and minor), that I cannot quote them with equal certainty." From what I have seen of Pyrola minor in its living state, I should think that no one could confound it with P. media. The rose-coloured, pink or nearly white, and much smaller flowers, and its short style and broad stigma *without* erect points, serve at once to distinguish it. Pyrola media is a much stouter plant, with larger flowers, which are generally whitish, sometimes tinged with pink or rose, and a protruding style, which is almost invariably deflexed and slightly curved, seldom quite straight: the stigma is rightly described as having "five erect points." I have never seen living specimens in flower of Pyrola rotundifolia, and therefore cannot speak so confidently with regard to its being distinct from P. media: from the dried specimens in my possession I can however say that the remarkable curvature of the style, which is considerably longer than that of P. media, seems to me to render the difference between the two very visible, even at first sight. With respect to the leaves I think it is next to impossible for the most acute observer to distinguish between the three species above named, until they are in flower. Pyrola secunda is a very distinct species; its ovate and serrated leaves and "greenish white" secund flowers, which do not spread themselves open like those of the other Pyrolas, render the plant at once distinguishable. Pyrola uniflora, now separated from the genus and named Moneses grandiflora, I have never seen except in a dried state: for many years it has not appeared in the two stations near Brodie House; the other station in Moray I have not visited. With respect to the distribution of the Pyrolæ in the only localities with which I am particularly acquainted, I may mention that in my opinion P. minor is the most extensively distributed within the county of Moray, and next to it P. media. P. secunda is rather local. In *this* district, or rather in the small part of it which I have examined, the two species media and minor are equally and rather abundantly distributed; while I have not been able to detect more than a single patch of P. secunda, containing about twelve or twenty specimens, and not in flower this season. The only station in which I have had an opportunity of seeing P. rotundifolia is that mentioned in the 'Collectanea for a Flora of Moray.' This I visited in July, 1834; the plant was not then in flower. By the way I would observe that the Pyrolæ in general seem to flower during the months of June and July, not of July and August, as is generally stated. They grow best in shady places, but Pyrola media is often found in heathy ground, and there it flowers earlier, and the flowers assume a whiter hue, tinged with more of pink or rose-colour.—*James B. Brichan; Manse of Banchory, July* 7, 1842.

193. *Rhinanthus major and Crista-galli.* Some years ago having heard doubts expressed respecting the existence of a real specific distinction between the two species

of Rhinanthus found in Britain, although I had no doubt of their being really distinct, I examined rather minutely a number of living specimens, and the following was the result of that examination.

| *Rhinanthus major.* | *Rhinanthus Crista-galli.* |
|---|---|
| Whole plant often immensely larger than Crista-galli, generally more branched; sometimes smaller and not branched, but in every state preserving its characteristics. *Branches* often numerous, nearly erect. | *Branches* few, nearly horizontal. |
| *Calyx* equal to the tube of corolla. | *Calyx* longer than the tube of corolla. |
| *Corolla* twice as long as calyx; bright yellow, segments of upper lip purple, and a single spot of purple on each of the side lobes of the lower lip: closed, with segments of upper lip connivent. | *Corolla* not much longer than calyx; yellow, variously spotted with purple: open, with segments of upper lip divaricate and somewhat revolute. |
| *Style* almost always exserted, sometimes the sixth of an inch. | *Style* included. |
| *Capsule* smaller, seeds fewer, with one side thicker, and a narrow margin; when fully formed bursting the skin at the thicker side. | *Capsule* larger, seeds more numerous, of uniform thickness, with a broad margin. |

To the above observations I may add that the *tout ensemble* of R. major is very different from that of R. Crista-galli, I mean in so far as appearance is concerned. I have seen both plants growing together, and think no one who could see them growing would consider them to belong to the same species: when dried they become quite black. Rhinanthus major may be said to be rather common in the counties of Moray and Nairn, at least on the coast. In the former county I have seen it growing on an eminence at the height of about 200 feet above the sea, and apparently aspiring still higher, in defiance of Ulex europæus and other well armed and stubborn shrubs. Its locality however is in corn and grass fields, where its abundance, its size, and the profusion of its bright yellow flowers, render it very conspicuous. There seems to be little reason to doubt that in Scotland at least it is not indigenous.—*Id.*

194. *Schistostega pennata.* I enclose a few specimens of Schistostega pennata, which I gathered last month in Nottingham forest, where it almost completely covers the roof of a dry sandstone cave. I found specimens in all stages of fructification, and think, from the situation in which it grew that there must be a constant succession in fruit. I possess specimens gathered by Dr. Howitt in the month of November.—*Joseph Sidebotham; 26, York St., Manchester, July* 7, 1842.

195. *Notes on the supposed parasitism of Monotropa Hypopitys.* It is under feelings of most unaffected diffidence that I venture to publish my notes on this subject, more especially as I find them at variance with the recorded observations of botanists so much more able to grapple with the question than myself. Still, having most unexpectedly become possessed of some luxuriant specimens of this interesting plant, I could not forego the opportunity of investigating for myself this *quæstio vexata*, and I now offer the results to the readers of 'The Phytologist.' The plants were four in number; each had two or more stems, about seven inches in height, bent over at the top and in full flower, a few young stems were ascending in a perfectly erect position.

The flowers had a scarcely perceptible scent, but the stem when broken smelled exactly like a raw potato. Each plant had been dug up with care, and was accompanied by a large ball of chalky earth, the surface-mould being abundantly intermixed with fragments of the cones of spruce and larch firs, and the leaves of spruce fir, birch and whitethorn, all in a state of decay. Each mass was permeated by roots, the majority of which were also decayed, but some few of them were still living, and I made them out to be those of a fir, a Hieracium and a scabious. I separated the earth from each mass with great care; the roots of the plants above mentioned falling from the mass as soon as the removal of the earth permitted of their doing so; and although, from the multiplicity of fibres, many of them had obviously been in immediate contact with the Monotropa, there appeared to be nothing like adhesion; and in no instance that I could detect was any portion of either of the roots contorted, swollen, shrunk or altered in appearance by the proximity of the Monotropa. In order to satisfy myself fully on this head, I subjected each detached root to a lengthened and tedious examination under a lens. Having cleared the Monotropa from extraneous substances, I next subjected the plant itself to a rigid scrutiny. It appeared to me to consist of three parts, somewhat analogous to the frond, rhizoma and roots of ferns. The rhizoma or underground stem was fleshy, brittle, succulent and branched: the branches were thickly clustered, the termination or growing extremity of each being always obtuse: scattered at intervals over the surface of the rhizomata were the gemmæ or buds destined to become fronds or ascending flower-stalks; on making a longitudinal section of one of these, the scales of the future frond were observable, neatly packed one within the other. Those portions of the rhizoma on which these gemmæ were most observable, were usually more detached than the rest; and it appears that when a frond begins to ascend, an active formation of rhizomata commences from the same point, shortly forming a dense cluster somewhat difficult of examination. Closely investing every part of these rhizomata except the growing extremities, which, for a short space, are invariably naked, I found the byssoid substance which Mr. Wilson has suggested may be the "woolly matted extremities of grasses," (Phytol. 149); this substance I believe to be an intrinsic and most essential portion of the Monotropa, and is the part to which I have applied the term *root*. My reasons for supposing it a part of the Monotropa are these:—1st. Its *constant* presence; a "byssoid fungus" (Phytol. 43), "the woolly matted extremities of grasses" (Phytol. 149), or any other extraneous matter, would of necessity be irregular in its appearance. 2ndly. The uniformity of its growth; the larger end of each fibre being invariably attached to the rhizoma; the branching, which is frequent, taking place at angles which are uniform among themselves, and follow the normal mode in other roots; and the distal extremities being extremely minute. 3rdly. Because on viewing a thin transverse slice of the rhizoma under a high power, the substance of the rhizoma and that of the roots appeared perfectly continuous and identical. 4thly. That when these fibres were forcibly detached at their origin, a manifest rupture of the cuticle of the rhizoma took place. These roots, for such I must consider them, spread freely over every substance within their reach. In many instances I found them forming a beautifully reticulated covering to the fragments of decaying fir-cones and leaves, and also in the fissures occasionally occurring in nodules of chalk. Sometimes they appeared closely investing the extraneous roots, but it is worthy of notice that I generally found these completely decayed: not simply shrivelled as by the exhausting power of a parasite, but in that state of decay in which a slight touch of the forceps would cause immediate separation. In many instances, when the Monotropa roots were purposely separated from the decayed roots, leaves, or portions of cone, their extremities remained attached to these extraneous substances. The proportion of *living* roots to which the fibrous extremities of the Monotropa roots had found their way was small as compared with that of those in a state of decay, yet such instances did occur; and although I used every endeavour to make out a decided continuity between the roots of the Monotropa and those of its supposed supporter, I relinquished the search without any proof that this occasional contact between the living roots was a matter of choice, or by any means essential to the vitality or well-being of the Monotropa. In candour it should further be remarked that in some instances the connexion between these byssoid fibres and the Monotropa was not fully made out; the more beautiful examples occurring on fragments detached from the mass before the superincumbent network had been observed; yet between attached and unattached fibres I detected no difference. The conclusions at which I have arrived as to the true nature of the byssoid covering of the rhizoma having been drawn from observations made with what might be considered, in the present day, an imperfect instrument, I obtained the kind assistance of Mr. E. J. Quekett, and by means of his superior microscope and able manipulation, the opinion which I had previously formed of the fibres became fully established.

It is, I believe, generally admitted that many species of ferns derive part of their food through the decaying portions of the bark and wood of trees to which their rhizomata are appressed: if this be strictly parasitism, then I think it will not be difficult to prove a like parasitism in the plant now under consideration. If, on the other hand, we are to understand by the word parasitism that one plant extracts the living juices of another *by immediate contact and positive adhesion*, as in the case of the dodder and mistletoe, or, as suggested by Mr. Lees in the case of Monotropa, by means of "hairy vesicular knobs seated on and of necessity nourished by the radical fibres of" another plant, (Phytol. 99), then I must confess that I met with nothing to induce such a conclusion.—*Edward Newman; Peckham, July* 8, 1842.

196. *New locality for Carex clandestina.* I am permitted by my brother-in-law, the Rev. Thomas Butler, of Langar, Notts., to state that on visiting Brean Down, Weston-super-Mare, in May last, he discovered Carex clandestina growing abundantly over the hill, in the same places with Helianthemum polifolium and Iris fœtidissima. I say *discovered*, because I have never seen any locality quoted for C. clandestina but that of St. Vincent's Rocks. The addition of a second station for so rare a plant, seems a fact of much interest.—*A. Worsley; Brislington, July* 12, 1842.

197. *Carex axillaris and C. remota.* These two species are readily distinguished from each other, as C. vesicaria is from C. ampullacea, by the structure of the culm or stem and leaves. In C. axillaris (and in vesicaria) the stem has three acute angles and the leaves are flattened: in the other two the stem is nearly round, and the leaves are bent at the sides so as to be almost semicylindrical. The bracteas of C. axillaris are by no means constant in their length; in one of my Cheshire specimens the lowest bractea scarcely overtops the spikelet to which it is attached; while in one gathered by John Martin in this county, it is twice as long as the spike. In this species, however, the second bractea is always very small compared with the lower one, having a membranous base much resembling the glumes in size and shape, the upper part rough, very narrow and awn-like. All the bracteas are auricled at the base; while those of C. remota, instead of auricles, have generally a pale very obscure ligule, passing completely round the rachis or common stalk of the spike, where a striking feature

exists :— *It is zigzag,* with only two rough edges, taking a fresh direction at each joint, as if pushed aside by the spikelet and its bractea; in C. axillaris the rachis is perfectly straight, and has three rough edges. The glumes in C. axillaris are roundish ovate (not acuminate), tipped with a very short rough point or continuation of the midrib; they are larger and whiter than those of C. remota, which are *ovate-acuminate* and narrower than the fruit. The lowest spikelet is generally compound in C. axillaris; but I have never seen it so in C. remota. With the ripe fruit of C. axillaris I am not yet acquainted; but from what I can judge of it in an immature stage it must be narrower than the glumes, and the ribs on the outer side must be essentially different from those of C. remota. I fear your correspondent (Phytol. 263) has another object in view, besides asking for information. He seems to have a particular fancy for severe criticism, and I am really surprized that he should advance the strange opinion that Dr. Goodenough was " not a very close observer of the Carices." The passage alluded to only shows that he had not at that time fully investigated the subject. It is surely sufficient for us to rectify the casual mistakes of our predecessors, without robbing them of their due meed of praise. Again, Mr. G. should be careful to quote accurately; and it is hardly fair to quote at all the first edition of Hooker's 'British Flora,' when in the second and subsequent editions the mistake has been corrected. In the second edition Carex axillaris is thus described: —" lower bractea long, the rest scarcely so long as the spike." The criticism unfairly represents that author as standing alone in the statement that C. axillaris is a taller plant than C. remota. Smith, in different language, says the same, namely, that C. axillaris is "larger" than remota. I quite agree that comment on this point is needless; and, as a comment, the superadded remark about the size of C. remota is inconclusive and misplaced. If Sir J. E. Smith were living, he would much disapprove of the use made of the other passage *misquoted* by Mr. G. — Smith, no doubt, had in mind what Goodenough had said of the " entire capsule " of C. remota, and was desirous of correcting the mistake, in language and in a spirit well worthy of imitation by all critics. He therefore mildly says of C. axillaris :—" beak more deeply cloven PERHAPS than that of C. remota, though this difference is not very striking." Mr. G. omits the important word " perhaps," and thus reduces the passage to sheer nonsense. This is not the way to deal with an author, nor the way to derive (much less to communicate) instruction. Mr. G.'s real difficulty in distinguishing C. axillaris from C. remota arises from his never having seen it. As for the descriptions in the two works quoted, they are not so defective that specimens actually in my possession might not, if taken singly, justify either of them. I cannot see the utility of alluding to the " good authority " of the source whence Mr. G. has received C. paniculata under the name of C. axillaris. If any *competent* botanist has thus sent it, he must have done so through mere inadvertence; and I do not think the *kind intention* of the donor is well requited by the public and somewhat sarcastic announcement of his error.— *W. Wilson ; Warrington, July* 15, 1842.

198. *Description of Carex axillaris,* (Phytol. 263). Root creeping, *not cæspitose* (which in C. remota it certainly is), growing in a more scattered and isolated manner than C. remota, quite as much so as C. teretiuscula compared with C. paniculata.— Stem from eighteen inches to two feet or more in height, rigid, comparatively robust and acutely triangular (its angles rough), strongly striated, nearly erect and straight. Leaves arising from the lower part of the stem, which they enclose in their sheathing bases, linear, plane, though channelled on their upper surface, striated, of a bright light green colour, more than twice the breadth of those of C. remota, slightly keeled

on the back, the edges of their lower half smooth, of the superior part rough, about equalling the stem in height, gradually narrowing into slender, rough points. Lower bractea foliaceous, rigid like the leaves, *erect*, forming as it were a continuation of the stem as regards its direction, generally taller than the spike, though very variable in this respect; the *second and superior* bracteas *remarkably short and diminutive*, nearly wanting in the upper spikelets, their bases expanded, then suddenly contracting and assuming an awn-like or capillary aspect; all the bracteas have evident auricles.—Spike two or three inches long, of from six to twelve ovate-lanceolate spikelets; the upper spikelets simple and remarkably crowded, those in the lower part more remote, and the lowest of all almost always *compound;* sometimes there are two or more compound spikelets on the same spike, especially in robust plants, their common rachis straight and triangular. Scales membranaceous, of a brownish white colour, broadly ovate, equalling the fruit in breadth but not in length, bluntish, with a strong prominent green central rib or keel, which extends beyond their apex, forming a distinct and very evident mucro. Fruit ovate, ribbed, with a rather broad, straight, cloven beak. Those who doubt the specific difference of this plant from Carex remota, do so, I feel persuaded, from not having had a sufficient opportunity of contrasting the two plants in a living state. I feel satisfied that no one who has ever witnessed, as I have done, these two species growing within a few inches of each other, and preserving unaltered their peculiar characteristic features, could be longer sceptical on this point. Their *habit* is strikingly different, so much so as to impress upon the mind at once (without the necessity of having recourse to minute anatomical differences) the conviction that they must be essentially different plants. The distinct and separate mode of growth of C. axillaris, its robust, rigid, and nearly erect triangular stems, its broader, plane and channelled foliage, the remarkable disposition and comparative length of its bracteas, its more numerous and larger spikelets, and their aggregation at the summit of the spike, are differences, I should think, amply sufficient to enable any one to distinguish it, *when seen*, from C. remota, and to satisfy any mind that is open to conviction, and willing to acknowledge the truth of facts so plainly manifest to the most careless observer of the beautiful works of creation.—*J. B. Wood, M.D.; Broughton, Manchester, July* 19, 1842.

199. *Love of Nature.* Ah! it is the love of nature that burns within our bosoms; the instinctive admiration of those woods, dark in shadow or hallowed by the coloured Iris; those cliffs now lit up in gold, or gray in twilight; those ravines whose depths are hidden in foliage, and into which the river plunges with sullen roar; those landscapes with all their waters and all their inhabitants, that, solemnly robed in the mists of morning, or splendidly revealed before the setting sun of evening, with all their associations, and all the thoughts and reflections they create and absorb, that charm, enchant, and enchain us. Whatever our avocations may be, whatever may be the object or the pretence with which we set out, when once under the open canopy of heaven, we are *free;* that machinery spreads before us in its simplicity and complexity, which requires no sighs, groans or anguish to keep up its movements; and that pure brisk air which the country only knows, is in motion to fan our foreheads, fill our lungs and excite us to hope, thought and inspiration!—*Edwin Lees' 'Botanical Looker-out among the Wild Flowers of the Fields, Woods and Mountains of England and Wales.'* *

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* Being obliged to defer a regular notice of this pleasant work, we have given a few extracts from the month of August.

200. *The Heaths.* Now it is that the different species of heaths (Erica) appear in their perfection of beauty, making glad the wilderness wherever they present themselves. Sandstone cliffs are empurpled with the flowers of the Erica cinerea, which often, too, covers the sides of mountains to a considerable height; while, wherever a weeping spring oozes upon the waste, the pale wax-like bells of the Erica Tetralix droop in clusters to the ground. Sir Walter Scott has finely depicted in Marmion, a sun-rise in a mountainous country, when the heath was in flower, and the first golden rays fell upon the mountains—

"And as each heathy top they kiss'd
It gleam'd a purple amethyst."

* * But the mountain heather of the Scotch poets, which gives such a black aspect to the bleak hills of Scotland, is the ling, or common heath (Calluna vulgaris), whose calyx, as well as corolla, is coloured; and whose elegant attire, generally diffused as it is in Europe, deserves every encomium it has received. When in full flower, nothing can exceed the beauty presented by a near prospect of hills of blooming heather, while they offer to the way-worn wanderer a fragrant couch, on which he may recline in luscious idleness, and obtain "divine oblivion of low-thoughted care." From the extent of moorland in Scotland, that country has been generally distinguished as the "land of brown heath," and the clans of McDonald and McAlister bear two of the species as their device: hence clouds, storms, and impending dreary rocks, are images that unconsciously arise in our minds, when referring to the heather bells; and a modern writer, when descanting upon the "moral of flowers," has exclaimed—

"Since I've view'd thee afar in thine own Highland dwelling,
There are spells clinging round thee I knew not before;
For to fancy's rapt ear dost thou ever seem telling
Of the pine-crested rock and the cataract's roar."—*Id.*

201. *The White Water-lily.* As the rose is the queen of the bower, so undoubtedly is the lily the empress of the lake, and I have only done my duty in thus testifying my admiration, as far as she is concerned; but I have merely sketched her figure as she reclines upon her liquid throne, realizing her poetical Indian name "Cumada," or "Delight of the Waters;" but there seems something so emblematical of *purity* about this lovely plant, that the warning of Shakspeare not to paint it is singularly appropriate, and I shall not soil the fair petals of the flower by touching farther upon it.—*Id.*

202. *Wild Flowers of August.* Summer! ah, where has summer been this year? is often a common exclamation at its close; for in ungenial years scarcely have we been able to obtain a glimpse of it, before it is already perceived waning away. Fine or wet, the flowers spring and fade, and the profusion of composite or syngenesious ones now perceptible, gives serious warning that the summer is declining and the days shortening. On the river side the tansy (Tanacetum vulgare) spreads its golden disk, gilding the bank; the hawkweeds muster numerous on the walls; the bristly-leaved Picris echioides, and grove hawkweed (Hieracium sabaudum), in the woods; other species appear throwing a golden hue upon the aftermath of meadows, or limestone banks; and the fleabane (Inula dysenterica) opens its specious disk upon the last days of August. Other signs are, alas! not wanting—the berries of the mountain-ash are flushed; those of the water Guelder-rose (Viburnum Opulus), and the Rhamnus Frangula, show their crimson beauties impending above the deep-flowing streams; the willow-herbs (Epilobium) empurple the beds of rivulets and wet ditches, and the mints

are beginning to blossom. Now the great mullein or hag-taper (Verbascum Thapsus) shows its "flannel leaves" and lofty spike of yellow flowers in perfection, like a huge torch in the dusk of evening; and others of the same species flash gloriously by waysides or gardens. In certain spots the tall dyer's weed (Reseda luteola) is very conspicuous, and the starry scabious (Scabiosa arvensis) lifts its flowers of regal purple high in air. The little centaury (Chironia Centaurea) named from Chiron the centaur, about this time adorns many a bank with its bright pink flowers; and the hedges are over-run with the ramping fumitory, the brilliant violet clusters of the tufted vetch (Vicia Cracca), the pink flowers of the everlasting pea (Lathyrus sylvestris), and the conspicuous white bells of the great convolvulus (Convolvulus sepium).—*Id.*

## Art. LXXX.—*Proceedings of Societies.*

### BOTANICAL SOCIETY OF EDINBURGH.

*July* 14, 1842.—This Society held its last meeting for the season in the Botanic Garden, Professor Graham in the chair. Various donations were presented to the herbarium and library:—from Mr. Loudon, plants collected in the South Sea Islands by the late Mr. Corson, surgeon; from Miss Ferguson, seeds collected by her father in Sierra Leone; a box of plants from the Mediterranean, collected by Edward Forbes, Esq., and volumes of important works from Dr. Muller of Emmerwick, on the Rhine, David Steuart, Esq., Edinburgh, and the Leopoldine Academy of Breslau. Thanks were ordered to be returned to the several donors, and Dr. Muller was unanimously elected a foreign member of the Society.

The corresponding Secretary read a statement of the plants which had been contributed during the season, amounting, on a rough estimate, to 5,000 species, and 25,000 specimens, many of which are rare and otherwise interesting, and he expressed his gratification in being enabled to say that they were generally much better preserved than the contributions of former years.

Professor Graham next exhibited to the Society a number of rare and beautiful plants which had recently come into flower in the green-houses; most of the gentlemen present thereafter accompanied the professor in a walk through the garden and greenhouses, and particularly to inspect a magnificent specimen of *Caryota urens*, which was a few days ago removed from the large green-house to the open border at the north end of the range. This magnificent palm was raised in the garden from seed brought from Calcutta about twenty-seven years ago, and has now attained a height of above forty-five feet, which rendered its removal necessary, as the house could no longer contain it. It is still comparatively uninjured, but will doubtless soon fall a victim to the cold and rough weather of our climate. The public should therefore not miss this rare opportunity of seeing a tropical palm growing luxuriantly in a Scottish garden—especially as it is much the finest specimen of the kind in Britain, if not in Europe. The heaths and many other green-house plants are at present in a beautiful state, and well worthy of a visit,—nor could the garden generally exhibit a more agreeable aspect than it now does.

The various papers on the list were deferred till next session.—*From 'The Edinburgh Evening Post and Scottish Standard,' Saturday, July* 16, 1842.

[The following list of papers deferred may be interesting to some of our readers. *Ed.*]

1. Remarks on the Assam Tea-plant, with specimens. *By Professor Christison.*
2. Some remarks on the state of Vegetation in Jersey, in March, 1842. *By Professor Graham.*
3. Report on Vegetables parasitic on living animals. *By Mr. John Goodsir, Conservator of the Museum of the Royal College of Surgeons.*
4. On the characters of the British Violets. *By Mr. C. C. Babington.*
5. On the nomenclature of British Plants, and the authority upon which several species have been introduced into the Society's Catalogue. *By Mr. C. C. Babington.*
6. Remarks on the British species of Cerastium. *By Mr. Edmonston.*

## BOTANICAL SOCIETY OF LONDON.

*July* 1st, 1842.—J. E. Gray, Esq. F.R.S. &c., President, in the chair. The following donations were announced:—British plants from Lady Sophia Windham and Mr. F. Robins, and British mosses from Mr. I. T. Hollings and Mr. H. Ibbotson.—Donations to the library were announced from the Imperial Academy of Sciences, St. Petersburgh, the American Philosophical Society, the American Academy of Sciences Philadelphia, and the Rev. A. Bloxam. Various specimens of plants, sections of wood &c. purchased at the sale of the Botanical Museum of the late A. B. Lambert, Esq., were presented by some of the members.

Mr. Arthur Henfrey (Curator) exhibited a monstrous specimen of *Scrophularia aquatica* (which is now in the Society's Museum), found by him on the 30th of June last, on an island in the Thames above Teddington. The plant was about three feet high, having a flat ribband-like stem rather more than half an inch broad, and scarcely an eighth thick. The flower-stalks grew chiefly out of the flat surfaces, nearly perpendicular to them, a very few only being at the edges, and not in any regular order. These flowering stalks extended over about eighteen inches of the stem, being about forty in number, exclusive of a very dense cluster at the summit of the plant. The flowers all appeared perfect, and the peculiarity of growth seemed to have resulted from a natural grafting of two plants. Mr. George Dickie presented specimens of *Gelidium rostratum* (Harvey), collected by him at Aberdeen. Specimens of *Lastræa cristata* (Presl), collected at Holt, Norfolk, were presented by the Botanical Society of Holt; and Mr. R. Phillips presented some seeds from the Cape of Good Hope. Mr. Thomas Sansom exhibited a monstrous specimen of *Cynoglossum Omphalodes* (Linn.) in which three peduncles were united longitudinally from the base to the extremity, and terminated by *two* calyces, the first being 6-partite, bearing a corolla of six segments, *five* stamens, one pistil and four seeds. The second was 9-partite, formed by the union of *two* calyces, respectively 4 and 5-partite, bearing two distinct petals placed side by side, each 5-lobed, each with five stamens, and each containing a pistil and a set of four seeds. Mr. S. also exhibited a specimen of *Galeobdolon luteum* (Sm.) in which the terminal petal was salver-shaped and 5-lobed; stamens four.

A paper was read by Mr. T. Sansom, being Notes of the first Excursion of the Members of the Society into Kent in June last; containing the habitats of the rarer species of flowering plants, and also notes on the most interesting specimens collected. —*G. E. D.*